### CD-DocDB #5544

## Recommendations

for

Service-Now

# **Availability Reporting**

## **Enhancements**

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#### Abstract:

This document discusses the limitations of the current availability measurement configuration of the Fermilab instance of Service-Now and provides a recommendation as to a flexible mechanism that would address the currently known limitations and support future availability measurement configurations.

## **Document Version History**

Version	Date	Author	Comments
V1.0	14-Apr-2015	Keith Chadwick	Initial Version

### **Table of Contents**

Document Version History	2
Executive Summary	4
Introduction	5
Current Service-Now Configuration and Issues / Limitations	5
Potential Solutions	6
Summary and Recommendations	7
Appendix 1 – Outage Records "Makes Sense" Table	8
Annendix 2 – Example Rollin Configuration	10

### **Executive Summary**

The current availability management configuration based on service offering categories in the Fermilab instance of Service-Now is not sufficient to meet the foreseeable near term needs of the Service owners, Service Management, and Service Clients.

In order to address this issue, I recommend that a new table be added to Service-Now dedicated to availability.

A group containing the Availability Manager, the Service Level Manager, the Assent and Configuration Manager, and at least one member of the Service-Now support team should be formed to perform a detailed evaluation and feasibility study of the above recommendation.

14-Apr-2015 CD-DocDB #5544 Page 4

#### Introduction

At the present time, the Fermilab Service-Now instance is configured to use Service Offering Categories as the basis of availability calculation through the use of outage records. This is a good initial configuration, and has allowed the Fermilab ITSM organization to gain experience with Service-Now availability calculations and outage record processing.

### **Current Service-Now Configuration and Issues / Limitations**

Unfortunately, while the Fermilab Service-Now availability management configuration using service offering categories was easy to implement, it does not "make sense" for some of the currently "ISO20K" onboarded services (refer to Appendix 1 for the complete list).

Service Offering "Make Sense" Evaluation	Example Service Offering Categories	Count
"Yes"	Active Directory Services, Email, Chat,	57
	Calendar, FCC[2,3] Data Centers, etc.	
"Yes?"	Call-in support, Mobile Device Support, NAS, Network Storage Enhanced, SAN, Scan Documents to a Central Storage Area, etc.	12
"No?"	Apache HTTPD Website Hosting, Consulting, Electronic Logbook, MySQL, Oracle, PostgreSQL, etc.	16
"No"	None at the present time.	0
Total		85

#### Key for the Above Table:

- Yes = Outage records make sense for the service offering category.
- Yes? = Outage records likely make sense for the service offering category.
- No? = Outage records likely do not make sense for the service offering category.
- No = Outage records do not make sense for the service offering category.

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<sup>&</sup>lt;sup>1</sup> Make Sense = Supports the collection of availability metrics that provide useful information to the consumers of the services, the service owners, and ITSM management.

#### **Potential Solutions**

In order to deliver effective availability measurements for the set of service offering categories that have been evaluated as Makes Sense = ["Yes?", "No?", "No"], the current Service-Now configuration must be expanded/extended to accommodate additional items.

There are (at least) two potential mechanisms to accomplish this:

- 1. Add a new availability field in the CMDB for CIs The advantage to this mechanism is that this could be implemented "transparently". The drawback to this mechanism is that not all CIs have an identical table structure (examples Application instances vs. Printer instances vs. Service Offering Categories).
- 2. Add a new table in Service-Now dedicated to availability The advantage to this mechanism is that no changes to the CI table structures are needed, and the availability table could be customized to meet the current and future availability and outage record handling needs. This mechanism can also be implemented transparently, since the existing service offering information could be copied into the new table. The drawback to this mechanism is that it would be a Fermilab specific customization of the Service-Now implementation.

After a fair bit of thought about the above options, I am recommending that we select the "Add a new table" option. My initial thoughts about the data structure of the table are shown below:

Table - Proposed Availability Management Table Data Structure			
Field Name Field Description			
am_item_name	The name of the item subject to availability monitoring.		
am_item_type	The type of the item subject to availability monitoring. Valid		
	types could include service_area, service_category,		
	service_instance, ci_name, etc.		
am_target_pointer	A pointer to the location where the availability target value corresponding to the <i>am_item_name</i> is stored. If this location can be easily determined from a combination of the <i>am_item_name</i> and the <i>am_item_type</i> , then this field may not		
	be necessary.		
am_rollup_target	The name of the (optional) availability rollup		

An example of how this data table could be populated is shown in Appendix 2 below.

### **Summary and Recommendations**

The current availability management configuration based on service offering categories in the Fermilab instance of Service-Now is not sufficient to meet the foreseeable near term needs of the Service owners, Service Management, and Service Clients.

In order to address this issue, I recommend that a new table be added to Service-Now dedicated to availability.

A group containing the Availability Manager, the Service Level Manager, the Assent and Configuration Manager, and at least one member of the Service-Now support team should be formed to perform a detailed evaluation and feasibility study of the above recommendation.

14-Apr-2015 CD-DocDB #5544 Page 7

## **Appendix 1 – Outage Records "Makes Sense" Table**

Active Directory (FERMI WIN FNAL GOV Domain) Apache HTTPD Website Hosting: Tier 1 Yes No? Apache HTTPD Website Hosting: Tier 2 Apache HTTPD Website Hosting: Tier 2 Apache HTTPD Website Hosting: Tier 4 Apache HTTPD Website Hosting: Tier 2 Apache HTTPD Website Hosting: Tier 4 Apache HTTPD Website Hosting: Tier 2 Apache HTTPD Website Hosting: Tier 4 Apache		ISO20K	Outage Records
Apache HTTPD Website Hosting: Tier 1 Apache HTTPD Website Hosting: Tier 2 Apache HTTPD Website Hosting: Tier 2 Apache HTTPD Website Hosting: Tier 4 Apache HTTPD Website Hosting: Tier 4  Call-in support Calendar  Call-in support Centrally Managed Email Submission Form for Fermi Managed Domains Chat Chat  Yes Consulting Yes Consultidion on device ordering Yes Consultidion on device ordering Yes Consumable Management Yes Yes Control Room System Management Yes Yes Control Room System Management Yes Yes CVS Yes Cotache Disk Cache Storage Yes Desktop Deployment Electronic Logbook Electronic Logbook Electronic Logbook during Data Taking Electronic Logbook during Data Taking Electronic Logbook Elall Electronic Logbook Financed MySQL Enhanced Oracle Yes Enhanced Oracle Yes No? Enhanced PostgreSQL Yes Enhanced SQL Server Enstore Tape Storage Yes Experiment Online System Management Yes Yes General Video Conferencing Yes General Video Conferencing Yes General Video Conferencing Yes General Video Conferencing Yes Grid Computing Center (FCC) 2 Yes Grid Computing Center (GCC) Computer Room A Grid Computing Center (GCC) Computer Room B Grid Computing Center (GCC) Computer Room C Yes Yes UMAC Enhanced Herbert Yes Yes Wes Lattice Computing Center (LCC) Yes Yes Yes Lattice Computing Center (LCC) Yes Yes Yes Lattice Computing Center (LCC) Yes Yes Major Application Support Managed Scientific Workstation Yes Yes Major Application Support	Service Offering Category Name	Onboarded	Make Sense
Apache HTTPD Website Hosting: Tier 2         Yes         NO?           Apache HTTPD Website Hosting: Tier 4         Yes         NO?           Call-in support         Yes         Yes           Call-in support         Yes         Yes           Centrally Managed Email Submission Form for Fermi Managed         Yes         Yes           Domains         Yes         Yes           Chat         Yes         Yes           Consultation on device ordering         Yes         Yes           Consulting         Yes         Yes           Control Room System Management         Yes         Yes           Fe Septemend Oracle         Yes         Yes           Enha	· · · · · · · · · · · · · · · · · · ·		
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Callendar         Yes         Yes           Call-in support         Yes         Yes           Centrally Managed Email Submission Form for Fermi Managed         Yes         Yes           Domains         Yes         Yes           Chat         Yes         Yes           Consulting         Yes         No?           Consumable Management         Yes         Yes           Control Room System Management         Yes         Yes           CVS         Yes         Yes           GCache Disk Cache Storage         Yes         Yes           Desktop Deployment         Yes         Yes           Ves         Yes         Yes           Desktop Deployment         Yes         Yes           Ves         Yes         Yes           Desktop Deployment         Yes         Yes           Pes         Yes         Yes           Desktop Deployment         Yes         Yes           Electronic Logbook         Urs         No?	•		
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Centrally Managed Email Submission Form for Fermi Managed Domains Chat Yes Yes Yes Consultation on device ordering Yes Consultation Consumable Management Yes Yes Consumable Management Yes Yes Control Room System Management Yes Yes Cothol Room System Management Yes Yes Yes Cothol Room System Management Yes Yes Yes Cothol Room System Management Yes Yes Yes Pes Relectronic Logbook Yes No? Electronic Logbook Yes No? Electronic Logbook during Data Taking Yes Yes Penhanced MySQL Yes Roor Enhanced MySQL Yes Pos Enhanced PostgreSQL Yes Pos Enhanced PostgreSQL Yes No? Enhanced SQL Server Yes No? Enhanced SQL Server Yes No? Enhanced SQL Server Yes Pensore Tape Storage Yes Experiment Online System Management Yes Yes Experiment Online System Management Yes Yes Feynman Computing Center (FCC) 2 Yes Yes Feynman Computing Center (FCC) 3 Yes Yes General Video Conferencing Yes Yes Grid Computing Center (GCC) Computer Room A Yes Yes Grid Computing Center (GCC) Computer Room B Yes Grid Computing Center (GCC) Computer Room C Yes Yes Hosting IMAC Yes Yes IMAC Yes Yes Yes IMAC Hosting Yes Yes Yes IMAC Hosting Yes Yes Yes Kerberos Certificate Authority (KCA) Yes Yes Yes Kerberos Certificate Authority (KCA) Yes Yes Yes Lattice Computing Center (LCC) Yes Yes Yes Lattice Computing Center (FCS FNAL.GOV Domain) Yes Yes Yes Mail Lists Major Application Support Yes Yes Managed Scientific Workstation Yes Yes Managed Scientific Workstation	Call-in support	Yes	Yes?
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Consulting Yes No? Consumable Management Yes Yes Consumable Management Yes Yes Control Room System Management Yes Yes CVS Yes Yes dCache Disk Cache Storage Yes Yes dCache Disk Cache Storage Yes Yes Desktop Deployment Yes Yes Desktop Deployment Yes No? Electronic Logbook Yes No? Electronic Logbook during Data Taking Yes No? EMail Yes No? EMail Yes No? Enhanced MySQL Yes No? Enhanced Oracle Yes No? Enhanced PostgreSQL Yes No? Enhanced PostgreSQL Yes No? Enhanced Virtual Hosting Yes No? Enhanced Virtual Hosting Yes Yes Experiment Online System Management Yes Yes Experiment Online System Management Yes Yes Experiment Computing Center (FCC) 2 Yes Yes Experiment Odenter (FCC) 3 Yes Yes General Video Conferencing Yes Yes Git Yes Yes Grid Computing Center (GCC) Computer Room A Yes Yes Grid Computing Center (GCC) Computer Room B Yes Yes Grid Computing Center (GCC) Computer Room B Yes Yes IMAC Hosting Yes Yes Kerberos Certificate Authority (KCA) Yes Yes Lattice Computing Center (LCC) Yes Yes Lattice Computing Center (LCC) Yes Yes Lattice Computing Center (LCC) Yes Yes Limited SLF Workstation and Scientific Test stand Yes Yes Mail Lists Yes Yes Mail Lists Yes Yes Mail Canter (Growthat Yes Yes Mail Canter (Growthat Yes Yes Mail Canter Laptops Managed Scientific Workstation Yes Yes Mail Canter Laptops Managed Scientific Workstation			
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IVIIGIOSOILIIO VVEDSIIE FIOSIIIIU. HELLI TES NIO7	Microsoft IIS Website Hosting: Tier 1	Yes	No?

MIT Kerberos Realm (FNAL.GOV)	Yes	Yes
Mobile Device Support	Yes	Yes?
MySQL	Yes	No?
NAS	Yes	Yes?
Network Enhanced	Yes	Yes
Network Facilities	Yes	Yes
Network Services	Yes	Yes
Network Storage Enhanced	Yes	Yes?
Oracle	Yes	No?
OS and Network User Area Backups	Yes	Yes
OS and Network User Area Backups Enhanced	Yes	Yes
Personal Computer Data Backup Service	Yes	Yes
PostgreSQL	Yes	No?
Print Services	Yes	Yes
Printer Support	Yes	No?
Redmine	Yes	Yes
SAN	Yes	Yes?
Scan Documents to a Central Storage Area	Yes	Yes?
Scientific Linux and Linux Engineering	Yes	Yes
Secure Certificate (SSL) for Fermi Owned Domains	Yes	Yes
Secure Certificate (SSL) for fnal.gov	Yes	Yes
Server Repair	Yes	Yes
Service Desk email support	Yes	Yes
Service Desk Enhanced	Yes	Yes
ServiceNow Self Service	Yes	Yes
Shift Scheduler	Yes	Yes?
Speakers Bureau	Yes	Yes?
SQL Server	Yes	No?
SVN	Yes	Yes
System Administration and Engineering Consulting	Yes	Yes
Teamcenter	Yes	Yes
Technology Store	Yes	Yes
Training on Managed Print Devices	Yes	Yes?
Video Conferencing Consulting	Yes	Yes?
Video Conferencing Enhanced	Yes	Yes?
Video Conferencing Training	Yes	Yes
Virtual Machine Hosting	Yes	Yes
Walk-in support	Yes	Yes
Wide Area Network Infrastructure	Yes	Yes
Wilson Hall 8 Fiber Central (WH8FC)	Yes	Yes

### Key:

Yes = Outage records make sense for the service offering category
Yes? = Outage records likely make sense for the service offering category
No? = Outage records likely do not make sense for the service offering category

No = Outage records do not make sense for the service offering category

## **Appendix 2 – Example Rollup Configuration**

am_item_name	am_item_type	am_target_pointer	am_rollup_target
Data Centers	rollup	99.90%	none
Feynman Computing Center (FCC) 2	service_offering	99.67%	Data Centers
Feynman Computing Center (FCC) 3	service_offering	99.67%	Data Centers
Grid Computing Center (GCC) Computer Room A	service_offering	99.50%	Data Centers
Grid Computing Center (GCC) Computer Room B	service_offering	99.50%	Data Centers
Grid Computing Center (GCC) Computer Room C	service_offering	99.50%	Data Centers
Lattice Computing Center (LCC)	service_offering	98.50%	Data Centers
Wilson Hall 8 Fiber Central (WH8FC)	service_offering	99.67%	Data Centers

Please note that the current availability target is listed in the *am\_target\_pointer* column.